



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/822,308	03/29/2001	Usman A.K. Sorathia	82,222	7684

7590 05/09/2002

Naval Surface Warfare Center
Carderock Division Headquarters
David Taylor Model Basin
9500 MacArthur Boulevard
West Bethesda, MD 20817-5700

EXAMINER

FEELY, MICHAEL J

ART UNIT	PAPER NUMBER
----------	--------------

1712

DATE MAILED: 05/09/2002

3

Please find below and/or attached an Office communication concerning this application or proceeding.

T.D-3

Office Action Summary

Application No.

09/822,308

Applicant(s)

SORATHIA, USMAN A.K.

Examiner

Michael J Feely

Art Unit

1712

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 March 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 11 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 March 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 2.
- 4) ☐ Interview Summary (PTO-413) Paper No(s) _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claim 1 (and dependent claims 2-14) are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear if the Applicant is claiming a process or an article (system). The preamble of the claim is drawn to a system, while the body of the claim is drawn to process steps. Applicant must clarify whether a process or a composite article is being claimed.

In addition, the claim language of "A system for protection of a composite structure having a substrate and a barrier applied thereto" can be interpreted three different ways: 1.) a process of applying a substrate and barrier to a composite structure, 2.) a process of applying a barrier to a composite structure, wherein the composite structure comprises a substrate, and 3.) a process of forming a composite structure by applying a barrier to a substrate. Based on the disclosure and the remaining claims, interpretation 3 seems to best describe the invention; therefore, the claims were interpreted this way for the prior art search. Clarification is required.

Claim Objections

3. Claim 11 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the

Art Unit: 1712

claim(s) in independent form. Claim 11 is dependent upon claim 8, and it recites the same limitation set forth in claim 8.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

5. Claims 1, 9, and 12-14 rejected under 35 U.S.C. 102(b) as being anticipated by Licht (US Pat. No. 4,467,577).

Regarding claims 1, 9, and 12-14, Licht disclose *a process for protecting a substrate by fabricating a composite structure* (Abstract), *comprising the steps of:* a) introducing a fire resisting agent to a barrier material (column 2, lines 24-29); and b) attaching said barrier to the substrate (column 2, lines 63-67; column 4, lines 12-19), wherein the barrier is an intumescent mat and the fire resisting agent is a phenolic resin (column 2, lines 24-29), wherein said attaching of the barrier is performed by bonding thereof to the substrate by application of an adhesive between the barrier and the substrate (column 3, lines 2-6), wherein said attaching of the barrier is effected in response to said introducing of the fire resisting agent by infusing into the barrier during formation of the substrate (column 2, lines 63-67), and wherein the substrate is formed as a solid layer underlying the barrier attached thereto (column 2, lines 66-62).

6. Claims 1, 2, 9, and 12-14 are rejected under 35 U.S.C. 102(b) as being anticipated by Ishikawa et al. (US Pat. No. 5,678,369).

Art Unit: 1712

Regarding claims 1, 2, 9, and 12-14, Licht disclose *a process for protecting a substrate by fabricating a composite structure* (column 2, lines 27-47), *comprising the steps of:* a) introducing a fire resisting agent to a barrier material (column 15, lines 60-62; column 16, lines 23-37); and b) attaching said barrier to the substrate (column 15, lines 62-66), wherein said step of introducing the fire resisting agent comprises: in-situ infusion of the agent into the barrier during said fabrication of the composite structure (column 2, lines 54-63; column 16, lines 30-39), wherein the barrier is an intumescent mat (column 15, line 66 through column 16, line 3; column 16, lines 40-47; column 2, lines 48-63) and the fire resisting agent is a phenolic resin (column 16, lines 30-39; column 4, lines 59-64), wherein said attaching of the barrier is performed by bonding thereof to the substrate by application of an adhesive between the barrier and the substrate (column 15, lines 62-66), wherein said attaching of the barrier is effected in response to said introducing of the fire resisting agent by infusing into the barrier during formation of the substrate (column 16, lines 30-39), and wherein the substrate is formed as a solid layer underlying the barrier attached thereto (column 15, lines 60-61; column 28, lines 32-41).

It should be noted the nonwoven fabric material disclosed in the reference is considered an intumescent material because it undergoes an impregnation step, in which the material would have inherently experienced swelling to some degree (see column 2, lines 54-63 and column 16, lines 30-39). The phenolic foam disclosed in the reference is also considered an intumescent material due to its porous nature.

Claim Rejections - 35 USC § 102/103

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 3-5, 7, and 10 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Ishikawa et al. (US Pat. No. 5,678,369).

Regarding claim 3-5 and 7, Ishikawa et al. disclose the process of claim 2, further comprising the step of applying a waterproofing cover skin to the barrier with the fire resistant agent infused therein (column 15, lines 60-62; column 28, lines 32-41), wherein the barrier is an intumescent mat (column 15, line 66 through column 16, line 3; column 16, lines 40-47; column 2, lines 48-63) and the fire resisting agent is a phenolic resin (column 16, lines 30-39; column 4, lines 59-64), and wherein the barrier is felt (column 15, line 66 through column 16, line 3; column 16, lines 40-47; column 2, lines 48-63) and the fire resisting agent is intumescent coating (column 16, lines 30-39; column 4, lines 59-64).

It should be noted that Merriam-Webster's Collegiate Dictionary (10th Edition), defines

felt as: 1 a: a cloth made of wool and fur often mixed with natural or synthetic fibers through the action of heat, moisture, chemicals, and pressure b: a firm woven cloth of wool or cotton heavily napped and shrunk 2: an article made of felt 3: as material resembling felt: as a: a heavy paper of organic or asbestos fibers impregnated with asphalt and used in building construction b: semi-rigid pressed fiber insulation used in building.

The nonwoven fabric disclosed by Ishikawa et al. reads on the definition of felt (3b); therefore, Ishikawa et al. disclose the limitation of claim 7.

Art Unit: 1712

Ishikawa do not explicitly disclose the step of applying the waterproofing cover skin prior to attaching the fire resistant agent-infused barrier layer to the substrate. However, based on Figures 16(a) and 16(b), the layers are formed in the sequence of: backing layer (waterproofing cover skin), adhesive/non-woven/foam/non-woven/adhesive (fire resistant infused barrier layer + adhesive on outer boundaries), and surfacing material (substrate). Therefore, the substrate would have inherently been applied after the waterproofing cover skin was applied.

Furthermore, it has been found that a process of making a laminated sheet by reversing the order of the process steps found in the prior art is an obvious variation of the prior art process – *Ex Parte Rubin*, 128 USPQ 440 (Bd. App. 1959).

Therefore, if not explicitly taught in the reference, then the teachings would have been obvious to one of ordinary skill in the art at the time of the invention.

Regarding claim 10, Ishikawa et al. are as set forth above in claim 3 and incorporated herein to meet the limitations of claim 10.

Claim Rejections - 35 USC § 103

9. Claims 6, 8, and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ishikawa et al. (US Pat. No. 5,678,369) in view of Licht (US Pat. No. 4,467,577).

Regarding claims 6, 8, and 11, Ishikawa et al. disclose the process of claim 3, wherein the waterproofing cover skin is an aluminum foil (column 15, lines 60-62; column 28, lines 32-41), but are silent regarding the use of a silicone adhesive for bonding the barrier to the substrate. Ishikawa et al. disclose the use of an adhesive for bonding the barrier to substrate, but disclose, “As the adhesive **105**, a material is selected from the group consisting of types in which curing is

Art Unit: 1712

effected by polymerization reaction such as cyano acrylate, epoxy; emulsion types such as rubber type, vinyl acetate type; and hot melt types such as ethylene-vinyl acetate, EVA and the like," (column 16, lines 52-56).

Licht also disclose a process wherein a fire resistant intumescent sheet is bonding to a substrate using an adhesive, including silicones and epoxies. Licht demonstrates that silicones are capable of bonding these material and that silicones are known bonding adhesives for intumescent sheet/solid substrate interfaces. Furthermore, silicones fall under the general description of appropriate adhesives set forth in Ishikawa et al: "types in which curing is effected by polymerization reaction" and "emulsion types such as rubber type."

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to have used a silicone adhesive to bond the barrier to the substrate, as taught by Licht, in the invention of Ishikawa et al., because Licht teach and intumescent composite comprising a fire resistant intumescent sheet bonded to one or more restraining layers using a silicone or epoxy adhesive, resulting in a material for use in sealing penetrations (cables) through floors, partitions, and ceilings from smoke, fire, gas, an water passage.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Michael J Feely whose telephone number is 703-305-0268. The examiner can normally be reached on M-F 8:30 to 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robert Dawson can be reached on 703-308-2340. The fax phone numbers for the

Application/Control Number: 09/822,308

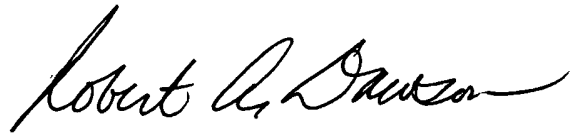
Page 8

Art Unit: 1712

organization where this application or proceeding is assigned are 703-872-9310 for regular communications and 703-872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Michael J. Feely
May 6, 2002



Robert Dawson
Supervisory Patent Examiner
Technology Center 1700